

AMATEUR RADIO — *A National Resource*

Remarks of

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QUARTER CENTURY WIRELESS ASSOCIATION

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*My fellow members of the Quarter Century Wireless Association
and Distinguished Guests:*

IT IS INDEED a great pleasure to join my many friends in QCWA at this Annual Dinner celebrating the 10th anniversary of the founding of the Washington Chapter. It also gives me a chance to say "thank you" and express my appreciation — for the Honorary Membership which you bestowed on me in absentia on the occasion of your first meeting ten years ago. I remember that at the last moment one of our perennial foreign crises popped up in the Department of State, and I had to run off and help put out the fire.

And if my impressions from the newspapers are correct, this particular fire brigade is still on 24-hour duty — and with no bonus for over-time, either!

Nevertheless, I am most grateful for the honor you gave me — plus the fact that as an Honorary Member I need pay no dues, yet still have the privilege of occasionally speaking my mind as one of your fraternity.

It is a particular privilege to speak before you this evening because the members of the QCWA in the Washington area, as well as many of your distinguished guests who are present, in my opinion constitute the most influential single group of men affecting amateur radio today.

Many of you hold responsible positions involving communications in our government, while others are in the front line of a wide range of communications activities — all of vital importance, directly or indirectly, to amateur radio.

THE PURPOSE of my talk is, first, to thank you on behalf of amateurs everywhere for all you have done for amateur radio in the past; second, to report to you a few of our accomplishments; and, third, to try to assess some of the problems we will be up against in the future.

For more than 50 years, amateur radio has had a unique relationship with the government of our country. It was the determination that amateurs should have access to a limited but adequate share of the radio spectrum, under rules and regulations that would provide an incentive for voluntary public service, that originally made this activity possible — and has kept it going ever since. On the other hand, without the kind of support and confidence it has received from the responsible people in our government, there is not the slightest doubt in my mind amateur radio would not exist today — either in the United States, or anywhere else in the world.

When it got started some 50 years ago, amateur radio was a phenomenon that probably could have happened only in the United States. Most other countries in the world regarded it, at best, as a nuisance; and more often than not, with open hostility and suspicion.

But our government fought for it over the years, not only because it was felt to be a valuable and legitimate activity in itself, but also because it seemed to fit in with our ideals of freedom — and the opportunity for the individual to be of voluntary service.

A great deal of the credit must go to Hiram Percy Maxim, the founder of the League, for originally propounding this philosophy after World War I. I know my father was deeply impressed by Mr. Maxim's vision of the future for amateur radio.

In 1927, at the International Conference of Washington, the question was hotly debated among the 80 participating nations as to whether or not amateurs should be allocated specific bands among the "short waves" they had discovered but a few years before. The United States viewpoint finally prevailed. At the concluding ceremonies my father, who was chairman of the American Delegation and also General Chairman of the Conference, had this to say in his closing speech:

"At this point I should mention that this Conference for the first time has recognized the amateur as an important element in radio com-

munication and has conferred upon him by international treaty certain definite wave lengths. The effects of these arrangements for the amateurs have been agreed by their representatives as increasing and assuring their opportunities to make contact with their companions overseas. To have given the boys of the world a status in international life by treaty is a fine recognition not only of the rights of all boys but a tribute to their service in developing the art."

DID MR. MAXIM or my father, or any of the others who so staunchly defended the existence of amateurs, have any real conception of what would take place in the future?

I think they may have had an inkling, although their decision was undoubtedly based as much on faith in the future, as it was on any factual evidence of the moment. But the accomplishments of the boys of whom my father spoke have far exceeded anything he — or anyone else — might then have envisioned.

Their accomplishments have tended to fall into two distinct categories. First, there are those which pertain to amateur radio *per se*. Secondly, there are those of a more indirect nature, of which I will speak later.

In 1927 there were about 17,000 amateurs in the United States. Today there are over a quarter of a million. During the intervening period they have made great progress, and in many instances they have pioneered the way in the technological revolution of communications.

Their technical and operating competence, their numerous contributions to the art and science of communications, their voluntary public service activities during emergencies and local disasters, their availability for National Defense, and their other activities have been told on many occasions.

Moreover, in the same span of time the League has grown to an active membership of over 80,000, its publications exceed 2,000,000 each year, and its full-time staff is now over 70. The League is proud that the Canadian amateurs have been an integral part of its structure since the beginning.

The generous citation to the League from the Red Cross this evening is a highlight in a close relationship that has existed between us for a great, great many years. It is a tribute we appreciate all the more keenly because the ARRL, like the Red Cross, is founded on a concept of voluntary public service.

I wish it were possible to give a replica of this plaque to the thousands upon thousands of amateurs who have participated in handling Red Cross communications, and willingly given their time and energy without any thought of compensation other than the satisfaction of a job well done.

Personally, I think we could accomplish a great deal more in the public service area than we do at present. Unfortunately, on the governmental side in recent years, there have been a number of confused situations in the responsibility for emergency and Civil Defense communications. When — and if — they are cleared up, the amateurs stand ready to cooperate to the best of their ability, and I believe they can make an even greater contribution to these vital services than ever before.

THE IDEA is often expressed, in this sophisticated age of electronics, that amateur radio is no longer on the front line of technical progress. Yet I doubt if any project in recent years has had as much romance to it as the amateur satellite program of Project Oscar. With the enthusiastic support of the Air Force — and more recently NASA — these dedicated amateurs have successively put four successful satellites into operation, the last two of which were translating-type repeaters of advanced design. Their ham-band signals have been copied by thousands of amateurs in every corner of the globe, and long distance contacts by v.h.f. and u.h.f. have become commonplace.

This Oscar project has opened up exciting new frontiers, and our friends in other fields of communication are just beginning to grasp its full significance. It has demonstrated beyond doubt there are now all sorts of possibilities for worldwide communication to remote places, using a combination of relatively low-power satellites and simple, inexpensive ground installations. The pioneering spirit is far from extinct.

THE ENTIRE BASIS upon which our government has been able to permit and encourage amateurs to use valuable pieces of the radio spectrum is that their operation is in accordance with the public interest, convenience and necessity. I am confident a substantial majority of the 250,000 licensed amateurs in the United States thoroughly understand this. And they take the responsibility seriously.

There are some, of course, as in almost any segment of society, who will go along just for the ride. They regard an amateur radio license as they would a driver's permit, and expect to go any place, at any time their fancy dictates. It never occurs to them this particular highway could be taken away and given to somebody else some day, if it could be put to a better use. But those who regard amateur radio solely as a source of self-amusement are, in my opinion, a minority.

It is in connection with these sorts of problems, especially, where the element of leadership by our governmental agencies has been most helpful. In the early days when there were only a few thousand amateurs, most of us knew each other personally — or over the air. Today, with 250,000 licensees, the problems are far more complex; and the League, through its leadership alone, cannot accomplish some of the things that must be done.

FOR EXAMPLE, about 3 years ago the League recognized that if the Amateur Service was to maintain its responsibilities for technical competence, in accordance with the definitions set forth in the Communications Act, there had to be a general upgrading of the Service. The Directors therefore recommended to the Commission that the Rules and Regulations be amended to require higher standards of technical qualification; and proposed, as an incentive, that all amateurs desiring to operate on certain popular bands be required to meet such qualifications. This became known as the incentive licensing proposal.

As expected, the idea created quite a furor in the amateur ranks. But I believe the Directors showed real courage and wisdom in proposing it. It is not often, in this day and age, that a membership society will ask that its licensing requirements be upgraded, rather than downgraded. But our Board felt that if the Amateur Service as a whole was to continue to operate in the public interest, and thereby qualify for whole-hearted support by our government, then the technical competence of the service must keep pace with present-day technology.

Our polls indicate that at least three-quarters of our 80,000 members favor some form of incentive licensing. About 55% favor the scheme proposed by the League, although there was no unanimity among the other 45% for any alternate system. We are most hopeful the Commission will

take constructive action in the near future, and settle the matter one way or another. Many of our members have difficulty understanding why the "due process" takes so long!

I have touched — all too briefly, I am afraid — on amateur accomplishments *per se*. For a moment I would like to explore some of the indirect accomplishments of the system. And in many ways I think they may be the most important — although perhaps the least appreciated.

In the last 50 years I estimate at least a million American youngsters have passed directly, or indirectly, through the ranks of amateur radio. These are the "boys" my father referred to in 1927.

WHAT HAS HAPPENED to these youngsters? Many of them, of course, have long since grown up — though quite a few are still active on the ham bands. But as they grew up they became the backbone of our telecommunications and electronics industries. Without them, I seriously doubt we would have gained the position of world leadership in electronics, communications, broadcasting, aeronautics, geophysics, space, and so many other fields in which we now excel all other countries — both industrially and militarily. It has been said that amateur radio is one of our greatest secret weapons. And yet it has been out in full view, for all the world to see, for 50 years.

Lest this sound too far-fetched, let me ask where else a youngster of high school age — or earlier in many cases — could go through a similar process of natural selection for his life work?

How else could he have his imagination better stimulated, or his scientific curiosity aroused?

Where else, at an early age, is there a more unique opportunity to reconcile theory with practice, to build something and make it work?

No wonder these youngsters go on to careers in science and engineering, never suspecting they had such an interest before. As a system for selecting and stimulating scientific aptitudes, it is second to none.

Let me give you some examples.

Last year, as President of the League, it was my duty to write a formal letter to the Air Force asking their help in launching Oscar III — one of the amateur translator-satellites. In due course I received a formal reply approving the project,

and directing Air Force personnel to give whatever assistance might be required. It was signed by the Undersecretary of the Air Force. But what caught my eye was that following his signature, he wrote "Ex-W9EAY." I was intrigued, and asked him about it.

Dr. McMillan told me he had no special interest in science at high school until one day he saw a friend's amateur set. He was immediately drawn to it, built a 210 TNT rig himself, and worked everything on the air. He proceeded to take all the high school physics he could get, went on to MIT where he received his B.S. and Ph.D. degrees magna cum laude, and followed with a distinguished career at Bell Labs. He said his one regret was that he had been so busy at MIT, Bell Labs, and in government, he hadn't had a chance to get back on the air yet!

Another example happened recently, from an equally unsuspected source. I was playing golf one day with my old friend Fred Kappel, the Chairman of A. T. & T. He turned to me and said, "Herb, how is the League doing?" You could have knocked me over with a feather, for I had no idea he had ever been in amateur radio.

It seemed he had a rotary spark outfit when a youngster in Minnesota, before W. W. I. When the war came along, a Naval Officer turned up, made him seal it in a trunk in his mother's attic and, so far as he knew, it was still there!

Soon after, he went to the University of Minnesota, studied Communications Engineering, as a result of his interest in amateur radio, and upon graduation in 1924 entered the Bell System.

In still another instance, not long ago I was talking with the technical manager of one of our largest space laboratories. He confided he had been most discouraged because neither of his boys — both in their early 'teens — showed any inclination toward science at all. He was never a ham, but in desperation he gave them each a Hamkit for Christmas. Now he happily complains he has to stay up all night, cracking the books to keep ahead of them, and never had so much fun.

Isolated cases? Not at all.

Art Collins, Bill Pickering, Frank Gunther, Bill Halligan, Fred Terman, Bill Eitel, Jack McCullough, Pat Hyland — to name only a few — are among the hundreds who head up their famous organizations today and got their start through amateur radio. And right behind them are count-

less thousands more who are the sinews of their organizations.

To substantiate our feeling of the important part these men have played in bringing our country to its present pre-eminent position in communications and electronics, the League last year commissioned the Stanford Research Institute to make an analysis of the subject. While their report is not yet finished, I understand they fully bear out these conclusions. Amateur radio is one of our great — though perhaps unrecognized — National Resources.

BUT WHAT about the boys of tomorrow? Here, it seems to me, we have to do some serious thinking. Can we afford *not* to carry on an institution that has been so vital in bringing us where we are today? I do not think so, and I propose we do three things about it.

First, within the last two years we have had a marked drop in the number of Novice licenses issued by the Commission. Indications are that the decrease has been in the neighborhood of 30 per cent, but no plausible explanation is apparent. As a counter-measure I suggest the Commission review its licensing procedures, and make this grade of license as readily accessible and easy to obtain as possible. After all, this class of license is good for only one year, and then it is necessary to take a more advanced exam for a higher grade. If the bug hasn't bitten during the first year, the youngster is probably immune — and no harm will be done.

Second, I think the QCWA and the ARRL — and any other groups who may be interested — should join forces and explore the possibilities of an intensive campaign to interest more youngsters in amateur radio. And let me say here, the Quarter Century Wireless Association is looked upon by the younger generation with the utmost reverence and respect, although at times — like many of their age — these boys may not want to admit it. A friendly word of encouragement, some tangible help in getting started, and an example of good operating practices will do wonders. I recommend you consider it as a conscious policy in the years ahead.

Third, and most important of all, is the preservation of our amateur assignments at the next international allocations Conference. This situa-

tion is so serious I would like to spend a few minutes more on the subject.

I DO NOT have to tell *this* audience that the radio spectrum is being squeezed today as never before. I am sure you are all thoroughly aware of it.

As civilization has moved forward and become more complex, the demand for radio communication has risen at an unprecedented rate. The increase seems to bear no simple relationship to population figures — or if it does, the demand has risen by some geometric *n*th power of the number of people in the world.

Nor has the demand been confined to any one sector of society — it seems to be equally acute in meeting local, regional, and world-wide needs. In other words, it takes in all parts of the radio spectrum.

Until recent years the most popular solution has been to try to cram more and more communications — especially long-distance ones — into an already overcrowded and relatively inelastic part of the spectrum. The potential pressure may have been alleviated to some extent on the higher density routes by improved submarine cables, and more recently by satellite-relay systems. Also, these innovations have vastly improved the quality and reliability of communications over the vagaries of the high-frequency transmission.

While these improvements — and others — will hopefully give more elbow room in the spectrum someday, it has not been noticeable on the air so far. Services using cables or satellites are still keeping their high frequency circuits in operation as a back-up, and those which do not yet have such alternate facilities seem to be multiplying faster than the proverbial bunny rabbit.

We, as amateurs, probably experience this pressure more strongly than any other service. Our own numbers have increased dramatically, and the occupancy of our narrow h. f. bands is many times greater than even a few years ago. Furthermore, we are probably using the assignments we *do* have more efficiently than any other service. Single-sideband telephony and selective c.w. operation are the order of the day. But the encroachment into our bands by high-powered stations of other services — especially short-wave broadcasters — is rendering some of our assignments almost useless.

WHERE IS this pressure coming from? As one might suspect, it does *not* come primarily from the countries who have been Old Timers in communications for many years — the “Haves” of the business. Rather it comes from the “Have Nots.” Many of the latter are countries who attained their sovereignty since the last ITU Conference in 1959, or were in the so-called “New and Developing” category prior to then. The thing that gives us deep concern — as amateurs — is that these countries not only seem to have a complete disregard for our ITU assignments, but in our conversations with their representatives at Geneva and elsewhere many of them see no reason preserving the rather meager amateur allocations at all. And as we add up the potential number of their votes at the next Conference, we believe amateur radio may be in real jeopardy. For without the limited frequency assignments we now have, especially those between 1.8 and 30 megacycles, amateur radio — as we know it today — would no longer exist.

That brings us to the question: What can be done about it?

FOUR YEARS AGO the Officers and Directors of the League recognized that the next Conference would be a critical one; and while the outcome would depend upon the majority of those voting, the degree of support received from our own government would be among the most important.

Two courses of action were therefore decided upon. The first was to make every possible effort in the United States to upgrade the Amateur Service in the public interest, and thereby merit the continuing confidence of our governmental agencies. This aspect I have already touched upon.

The second course was to strengthen and expand the International Amateur Radio Union, which consists of our sister societies in other countries. To this end, the officers of the League — who by the Constitution of the Union are its officers also — made numerous trips to Europe to review plans with the IARU Region I Organization, and to exchange views with officers of individual societies. We believe coordination between members in Region I — both Europe and Africa — is better

than ever before, and they are gaining increased awareness of the problems that lie ahead.

On a recent trip to Europe last fall, for instance, John Huntoon, Bob Booth and I had prolonged discussions with the officers of the Region I group, as well as with society officers in Switzerland, Great Britain, Ireland, Denmark, Norway, Finland, Portugal, Germany, Belgium, and Holland. We found a reassuring unanimity of purpose and a complete desire for cooperation.

Two years ago the League was instrumental in the formation of the Region II Organization comprising societies of some 18 countries in the Western Hemisphere. While this group is just getting started, they have a high degree of enthusiasm and their progress is most encouraging. Representatives of the League are taking an active part in this effort and we are assuming a substantial share of the financial costs.

The purpose of these efforts by the League, of course, is to impress upon our sister societies abroad that they have the primary responsibility for gaining the support of their respective governments at the next Conference. We believe their efforts are growing in effectiveness, but obviously there is still a long way to go.

Out of the 129 countries now participating in the ITU, less than one-half are represented in the councils of the IARU. Most of those remaining are in the “New and Developing” category where little or no amateur activity exists. When it comes to amateur matters, in many instances, I feel sure the decision of these countries will be strongly influenced by the position of our own government.

IN THE UNITED STATES the League is, in effect, asking our government to make a new and critical evaluation of the Amateur Service.

We believe it will show amateur radio is a real and very valuable asset.

We think it is an institution worth fighting for.

And if our government, with all the elements of world leadership which it has at its disposal, will take a vigorous position, we feel there is an excellent chance for the preservation of this unique National Resource.

Thank you.

